

REMARKS/ARGUMENTS

A Request for Continuing Examination of this application is filed concurrently herewith. Reconsideration of this application is therefore respectfully requested.

Drawings

The drawings were objected to under 37 CFR 1.83(a) on the grounds that the feature specified in claim 23 was not shown in the drawings.

Claim 23 is cancelled without prejudice, and the rejection is traversed.

Moreover, Applicant notes that cancelled claim 23 called for a metal ring gasket wherein the corners of the annular body are beveled and the annular body has an octagonal cross-section. This is shown in Figure 4, where the cross-sectional view of the metal ring gasket has beveled corners and eight sides.

Claim Rejections – 35 USC § 102

The Office Action rejected claim 20 under 35 USC § 102(b) as anticipated by Volpin. Claim 20 is cancelled without prejudice, and the rejection is traversed.

Claim Rejections – 35 USC § 103

The Office Action rejected claims 1, 3-7, 10, 12-14, 28 and 30-31 under 35 USC § 103(a) as being unpatentable over Putch, et al. in view of Laird.

Putch, et al. teach a flanged union, rather than a threaded union, that includes a metal wellhead seal for sealing between inner and outer concentric wellhead components. The metal wellhead seal includes a circular metal seal ring having a flat end and a tapered end and positioned between the inner and outer components. Applicant respectfully submits that the teachings of Putch, et al. are irrelevant to the inventions claimed in claims 1, 3-7, 10, 12-14, 28 and 30-31.

The metal seal ring shown in the drawings of, but not described in, Putch, et al. between the flange components of the flanged union is a BX ring well known in the art. BX rings are widely used in flanged unions and require sequential bolt tightening in order to achieve adequate compressive force to compress the BX ring into sealing contact with the grooves. The BX ring does not provide a pressure energized seal. Flange makeup, a procedure well known to those skilled in the art, requires that closely spaced bolts that

connect opposed flanges together be tightened in a predetermined sequence. Not only must the flanges be bolted together, each bolt must be tightened in the predetermined sequence to a predetermined torque. BX rings, such as the one shown by Putch, et al., have been widely used in high-pressure applications for many years. To Applicant's knowledge, however, a BX ring has never been, and cannot be, used in a threaded union because adequate torque cannot be developed by the nut of a threaded union to crush a BX ring as required for a high-pressure fluid seal.

The Office Action asserts that Laird teaches that connecting two components by either bolts 24 or nut 30 are equivalent in the art and that it would have been obvious to replace the bolts in Putch, et al. with a nut. Applicant respectfully disagrees.

Laird teaches a gasket for pipe fitting. As should be understood by those skilled in the art, pipe fitters deal with relatively low pressures, such as those encountered in steam boilers and the like. Applicant notes that Laird states that (see page 2, lines 80-88).

In some cases the gasket may be used where the gasket pressure must be high and expansion or other strain on the joint is very heavy. In such cases it may be necessary to provide abutment screws 36 which are threaded through one flange and arranged to make engagement with the face of the opposing flange by which movement of one flange relative to the other may be limited or prevented.

It would be understood, however, that high pressure in a steam system would not equate to high pressure in an oil drilling system as in Putch, et al.

Even if Laird could provide a teaching that threaded unions and flanged unions are interchangeable in a steam system, Laird would not provide a motivation to replace the flanged union in Putch, et al. with a threaded union for at least the reason that, as described above, a threaded union would not apply sufficient pressure to crush the Putch, et al. BX ring. That is, modification of the Putch, et al. device to include a threaded union would prevent the BX ring from effecting a high-pressure fluid seal.

Still further, even if a nut 30 of Laird were mounted on the tubing head adapter 18 of Putch, et al., there is no indication how the nut could be threaded onto tubing head 14 to operatively bring the two together without interfering with lock down screws 88.

For at least these reasons, the rejection of independent apparatus claims 1 and 4 is thereby traversed. Similar arguments apply to independent method claim 28.

The Office Action rejected claims 2, 11 and 29 under 35 USC § 103(a) as being unpatentable over Putch, et al. in view of Laird and further in view of Parmesan. Parmesan teaches a threaded union which uses an elastomeric seal ring retained by retainer ring 7 (7a) and clamped tightly between opposing ends of the coupling members 1 and 2b. Parmesan fails to cure the deficiencies of Putch, et al. and Laird.

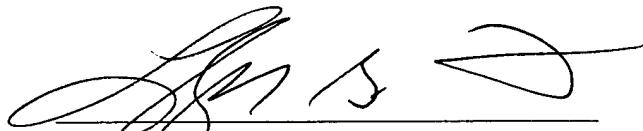
The Office Action rejected claims 15-19, 21-22 and 24-27 under 35 USC § 103(a) as being unpatentable over Volpin. Volpin also fails to cure the deficiencies of Putch, et al. and Laird.

Claims 2 and 3 depend from independent claim 1. Claims 5-19 directly or indirectly depend from independent claim 1, while claims 29-31 depend from independent claim 28. These dependent claims recite further limitations and are allowable in their respective combinations.

For at least the reasons set forth above in detail, it is respectfully submitted that claims 1-19 and 28-31 that remain pending in this application define novel subject matter and are in a condition for immediate allowance. Favorable reconsideration and early issuance of a Notice of Allowance is therefore requested.

Respectfully submitted,

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